

What is claimed is:

1. A transmitting apparatus for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data, comprising:

managing means for managing a hierarchical structure of a directory composed of a container entry and a leaf entry, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

detecting means for detecting a change of the hierarchical structure of the directory managed by said managing means and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries corresponding to the detected result, the second difference information being the difference of leaf entries; and

transmitting means for separately transmitting the first difference information and the second difference information.

2. The transmitting apparatus as set forth in claim 1,

wherein said transmitting means adds identification information that identifies each container entry to the first difference information.

3. The transmitting apparatus as set forth in claim 1,

wherein said transmitting means adds identification information that identifies each leaf entry to the second difference information.

4. A transmitting method for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data, comprising the steps of:

(a) managing a hierarchical structure of a directory composed of a container entry and a leaf entry, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

(b) detecting a change of the hierarchical structure of the directory managed at step (a) and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries, the second difference information being the difference of leaf entries; and

(c) separately transmitting the first difference information and the second difference information.

5. A receiving apparatus for receiving a hierarchical structure of a directory for hierarchically managing the locations of contents data that is transmitted, comprising:

receiving means for receiving first difference information, first identification information, second difference information, and second identification information, the first difference information being obtained by detecting a change of container entries, the first identification information identifying each container entry added to the first difference information, the second difference information being obtained by detecting a change of leaf entries, the second identification information identifying each leaf entry added to the second difference information, the directory being composed of container entries and leaf entries, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry not containing information in the immediately lower hierarchical level thereof;

managing means for managing the hierarchical structure of the directory formed corresponding to the first difference information and the second difference

information; and

changing means for selectively obtaining the second difference information and changing the hierarchical structure of the directory managed by said managing means corresponding to the obtained second difference information.

6. The receiving apparatus as set forth in claim 5,

wherein said changing means selectively obtains the second difference information as a leaf entry in the immediately lower hierarchical level of a container entry represented by the first identification information corresponding to selection information selectively designated to the first identification information and changes the hierarchical structure of the directory managed by said managing means.

7. A receiving method for receiving a hierarchical structure of a directory for hierarchically managing the locations of contents data that is transmitted, comprising the steps of:

(a) receiving first difference information, first identification information, second difference information, and second identification information, the first difference information being obtained by detecting a change of container entries, the first identification information identifying each container entry added to the first difference information, the

second difference information being obtained by detecting a change of leaf entries, the second identification information identifying each leaf entry added to the second difference information, the directory being composed of container entries and leaf entries, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry not containing information in the immediately lower hierarchical level thereof;

(b) managing the hierarchical structure of the directory formed corresponding to the first difference information and the second difference information; and

(c) selectively obtaining the second difference information and changing the hierarchical structure of the directory managed at step (b) corresponding to the obtained second difference information.

8. A transmitting and receiving system for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data and receiving the transmitted hierarchical structure, comprising:

first managing means for managing a hierarchical structure of a directory composed of a container entry and a leaf entry, a container entry containing information in the immediately lower

hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

detecting means for detecting a change of the hierarchical structure of the directory managed by said first managing means and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries corresponding to the detected result, the second difference information being the difference of leaf entries;

transmitting means for adding first identification information to the first difference information and second identification information to the second difference information and separately transmitting the first difference information and the second difference information, the first identification information identifying each container entry, the second identification information identifying each leaf entry;

receiving means for receiving the first difference information, the first identification information, the second difference information, and the second identification information transmitted by said

transmitting means;

second managing means for managing the hierarchical structure of the directory formed corresponding to the first difference information and the second difference information; and

changing means for selectively obtaining the second difference information and changing the hierarchical structure of the directory managed by said second managing means corresponding to the obtained second difference information.

9. The receiving and transmitting system as set forth in claim 8,

wherein said changing means selectively obtains the second difference information as a leaf entry in the immediately lower hierarchical level of a container entry represented by the first identification information corresponding to selection information selectively designated to the first identification information and changes the hierarchical structure of the directory managed by said second managing means.

10. A transmitting and receiving method for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data and receiving the transmitted hierarchical structure, comprising the steps of:

(a) managing a hierarchical structure of a directory composed of a container entry and a leaf

entry, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

(b) detecting a change of the hierarchical structure of the directory managed at step (a) and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries, the second difference information being the difference of leaf entries;

(c) adding first identification information to the first difference information and second identification information to the second difference information and separately transmitting the first difference information and the second difference information, the first identification information identifying each container entry, the second identification information identifying each leaf entry;

(d) receiving the first difference information, the first identification information, the second difference information, and the second identification information transmitted at step (c);

(e) managing the hierarchical structure of the directory formed corresponding to the first



difference information and the second difference information; and

(f) selectively obtaining the second difference information and changing the hierarchical structure of the directory managed at step (e) corresponding to the obtained second difference information.

5

050603461 0623020